

Abstract Submitted  
for the SHOCK15 Meeting of  
The American Physical Society

**AM363 martensitic Stainless Steel: a multiphase equation of state**  
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Laboratory, Theoretical Division — A multiphase equation of state for stainless  
steel AM363 has been developed. Three phases are constructed separately: the low  
pressure martensitic phase, the austenitic phase and the liquid. Room temperature  
data and the explicit introduction of a magnetic contribution to the free energy  
determine the martensitic phase, while shock Hugoniot data is used to determine  
the austenitic phase and the phase boundaries. More experimental data would be  
useful to better characterize the liquid.

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Date submitted: 27 Jan 2015

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